ACUMEN™

Hydration Watch

Hydra-Alert™ HRM

Features:
- Fluid Check™
- Temperature & Humidity Detection
- Heat Index
- 2.4GHz ANT + Sport Digital Heart Rate Monitoring
- Conductive Fabric Chest Belt
- Acumen's Patented EZ-Set Target Zone
  with Visual and Audible Alarms
- In-Zone-Goal Count Down Timer
- Free Training
- Lap Training (50 Laps)
- Calorie Counter

CONTENTS

# Product Introduction

1

Product Introduction

1.1 Features

➢ HEART RATE MONITORING (HRM)
  - 2.4 GHZ ◼ANT + Sport Digital HRM
  - Conductive Fabric Chest Belt
  - Current / Average / Maximum HR
  - EZ - Set Target Zone with Visual & Audible Alarms
  - Time Above / Within / Below Target Zone
  - In - Zone - Goal Count Down Timer (5-60 minutes)
  - Average HR Per Lap
➢ TRAINING
  - Free Training
  - Lap Training (50 laps)
  - Interval Timers
  - Stopwatch for Elapsed Exercise Time
➢ DEHYDRATION & FITNESS
  - Fluid Check™ for Safeguarding Against Dehydration
  - Temperature and Humidity Detection
  - Heat Index
  - Fitness Index
  - Max MET (VO2 MAX) Calibration
  - Programmable Exercise Type
  - Calorie Counter
➢ STANDARD FEATURES
  - Daily Alarm
  - Clock / Date / Day Display
  - NiteLite with SmartLite
  - Scratch Resistant Crystal Lens
  - Water Resistant to 30 Meters

1.2 Package Contents

A. Hydra-Alert™ HRM Watch
B. Heart Rate Transmitter with Chest Strap
C. Instruction Manual

B   A
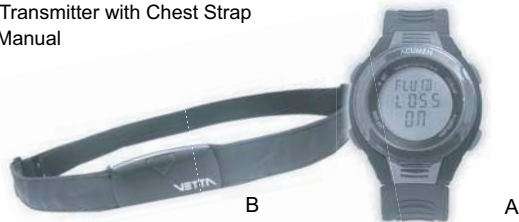
1.3 Chest Belt Installation

Attaching Your Chest Belt

	1. Moisten both strips of conductive fabric on the chest belt.
Press Press	2. Insert the two pins at the back of the transmitter into the two mounting holes on the Conductive Fabric Chest Belt. 3. Push the transmitter downwards to lock the transmitter in place. (See the picture on the left).
	4. Check and adjust the tension of the Elastic Strap to ensure that the conductive fabrics fit tightly against your skin.

Note: The watch does not have to be worn on your wrist to register your heart rate, but it must be within 3 feet from your Conductive Fabric Chest Belt.

Replacing the Battery

Press Press	1. Remove the transmitter from the Conductive Fabric Chest Belt.
	2. Use a coin to open the battery door. 3. Replace the used battery with a new battery.

1.4 SYNC Setup

Before you start training, enter **SYNC Setup** under **Set Mode** to synchronize the
heart rate chest belt with the watch as described below.

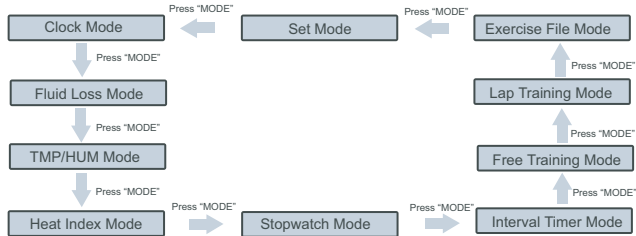|	
WAIT… SET **Waiting for Signal**	● Press **"***EXIT***"** to return to **SYNC Setup**.
SYNC D ON E SET **If success**	● Advance to **SYNC Setup** automatically after 2 seconds.

**SYNC
RE TR Y?**
SET
If fails
	● Press **" ◄┘ "** to start **SYNC
	  Setup** again.
	● Press **"***EXIT***"** to return to
	  SYNC Setup.

USING YOUR HYDRA-ALERT

2

USING YOUR HYDRA-ALERT

Overview

The Normal Modes in **Hydra-Alert**[TM] **HRM** can be toggled in the following sequence by pressing "*MODE*".

Clock Mode	← Press "MODE"	Set Mode	← Press "MODE"	Exercise File Mode
↓ Press "MODE"				↑ Press "MODE"
Fluid Loss Mode				Lap Training Mode
↓ Press "MODE"				↑ Press "MODE"
TMP/HUM Mode				Free Training Mode
↓ Press "MODE"				↑ Press "MODE"
Heat Index Mode	→ Press "MODE"	Stopwatch Mode	→ Press "MODE"	Interval Timer Mode

Summary of Icons

♥	⏱	•)))	🔔
Heart Rate	Interval Timer	TZ Alarm	Daily Alarm

▲	▼	⊙
Current HR Above TZ	Current HR Below TZ	Turn On / Off Daily Alarm, TZ Alarm & Interval Timer

Summary of Beeps

Button	➢ Produces a short beep
SYNC Setup	➢ If SYNC fails, produces a 3-second beep
Daily Alarm	➢ Produces 1-minute of double short beep until a button is pressed to stop it
Interval Timer	➢ Produces 4 double short beeps at the completion of each Interval ➢ Produces 4 triple short beeps at the completion of each Cycle ➢ Produces a 3-second beep at the completion of the Final Interval
TZ Alarm	➢ Beeps constantly until HR is back to TZ
TZ Goal Timer	➢ Produces a 3 - second beep when the **TZ Goal Time** is reached

2.1 Clock Mode

WED 36
07-23'08
4:13 PM
Without HR
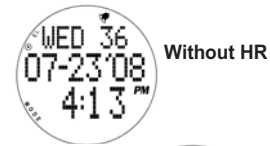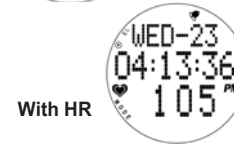
WED-23
04:13:36
105 PM
With HR

- Press "*EL*" to activate the NiteLite

- Press & Hold"⊙" to Turn On / Off the Daily Alarm

- Press "*MODE*" to Advance to **Fluid Loss Mode**

Note: The icon that needs to be pressed & held will blink slowly.

2.2 Fluid Loss Mode

FL-ml
6 80

FL-ml
0.95 %
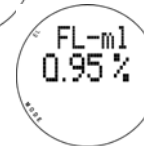
● Press "*EL*" to activate the NiteLite.

● Press "*MODE*" to advance to **TEM/HUM Mode**.

2.3 TEM/HUM Mode

TMP
25 ℃

HUM
70 %

● Press "*EL*" to activate the NiteLite.

● Press " *MODE* " to advance to **Heat Index Mode**.

2.4 Heat Index Mode

HI 10 0

ULTRA CARE

● Press "*EL*" to activate the **NiteLite**.

● Press " *MODE* " to advance to **Stopwatch Mode**.

Note: When the Heat Index is shown and its current value is at a very high level, the watch will alert you by switching between the Heat Index values and warning messages. The warning messages include **Care, Ultra Care, Danger** and **Ultra Danger** (Refer to page 31 for additional details).

2.5 Stopwatch Mode

Press **"S*TR*"** to start the stopwatch.

STOP-W 00:00:00	● Press **"*EL*"** to activate the **NiteLite**. ● Press **"*STR*"** to start the stopwatch ● Press **"*MODE*"** to advance to **Interval Timer Mode**.
When the stopwatch is running	● Press **"*EL*"** to activate the **NiteLite**. ● Press **"*STOP*"** to stop the stopwatch ● Press **"*MODE*"** to advance to **Interval Timer Mode**.
When the stopwatch is stopped	● Press **"*EL"*** to activate the **NiteLite**. ● Press **"*STR*"** to start the stopwatch ● Press **"*CL*"** to reset the stopwatch and return to **stopwatch mode** ● Press **"*MODE*"** to advance to **Interval Timer Mode**.

2.6 Interval Timer Mode

Press **" ⏎ "** to see the set information about Interval Timer.

INT TIMER	● Press **"*EL*"** to activate the **NiteLite** ● Press & hold **"☉"** to turn On / Off the **Interval Timer.** ● Press **"⏎ "** to enter **Interval Timer Mode.** ● Press **"*MODE*"** to advance to **Free Training Mode**.

In Interval Timer Mode, you can view Timers' different information:

Timer 1	
TIMER1 CYC:2 05:00	● Press **"*EL*"** to activate the NiteLite ● Press & hold **"☉"** to turn On / Off the In**terval Timer**. ● Press **"*NXT*"** to advance to next item. ● Press *"EXIT"* to return to **Interval Timer Mode**.
Timer 2	
Timer 3	

Note 1: All three **Timers** will be turned On or Off simultaneously, so if you just want to adjust one or two of the **Timers**, then you should set the time of the other **Timer**s to zero in **Set Mode**. The **Timer** will not be activated when it is set to zero.

Note 2: When the **Interval Timer** starts, it will replace the **Stopwatch**.

2.7 Free Training Mode

Before you begin training, make sure you have synchronized the **Heart Rate Transmitter** with the watch. Press **"*STR*"** to start free training and enter the **Total Time** of free training.

**FREE
TRAIN**

- Press **"EL"** to activate the **NiteLite**.
- Press & hold **"☉"** to turn On / Off TZ Alarm.
- Press **"STR"** to start free training and enter **Total Time**.
- Press **"MODE"** to advance to **Lap Training Mode.**

When the stopwatch is running, you can view the following information:

Total time

**TOTAL
00:28:00
115
▼TZ**

Time in TZ

**IN TZ
00:15:00
128
TZ**

Fluid Loss

**FL-ml
680
119
▼TZ**

**FL-ml
0.95%
119
▼TZ**

- Press **"EL"** to activate the **NiteLite**
- Press & hold **"☉"** to turn **On / Off TZ Alarm**.
- Press **"STOP"** to stop the **Stopwatch**
- Press **"NXT"** to advance to next item.

LM Time Above TZ

**> TZ
00:09:00
136
TZ**

LM Time Below TZ

**< TZ
00:04:00
145
TZ**

AVG HR

**AVG HR
128
153
TZ**

LM Max HR

**MAX HR
165
159
▲TZ**

Calorie

**CAL
368
157
TZ**

- Press **"EL"** to activate the **NiteLite**
- Press & hold **"☉"** to turn **On / Off TZ Alarm**.
- Press **"STOP"** to stop the **Stopwatch**
- Press **"NXT"** to advance to next item.

Note: " **LM** " represents information that can only be viewed in Long Menu. You can set **Long** or **Short Menu** in **HR Setup**. In **Long Menu**, you can see more information about your exercise event.

When the stopwatch is stopped, you can view the following information:

Fitness Index

FI
00:01:00
107
▼TZ

Fitness Index

FI
82
89
▼TZ

Total time

Time In TZ

Fluid Loss

LM Time Above TZ

LM Time Below TZ

AVG HR

LM Max HR

Calorie

- Press **"EL"** to activate the **NiteLite.**
- Press & hold **"☉"** to turn **On / Off TZ Alarm.**
- Press **"STR"** to start Free training and enter **Total Time**.
- Press **"NXT"** to enter next item.
- Press **"EXIT"** to advance to **Store Data.**

Note 1 : **Fitness Index** is used to measure your fitness level by monitoring how quickly your heart rate recovers **in one minute.**

The Fitness Index Level is as follows:

0-20 ➡ Poor   21-40 ➡ Fair   41-60 ➡ OK
61-80 ➡ Good   81-100 ➡ Excellent

Note 2 " **LM** "represents information that can only be viewed in Long Menu. You can set **Long** or **Short Menu** in **HR Setup**. In **Long Menu**, you can see more information about your exercise event.

Store Data

STORE
DATA?

- Press **" EL"** to activate the **NiteLite**.
- Press **" ↵ "** to store data and exit to **Free Training Mode.**
- Press **" EXIT "** if you do not wish to store data and exit to **Free Training Mode.**

2.8 Lap Training Mode

Before you begin training, make sure you have synchronized the **Heart Rate Transmitter** with the watch. Press **"STR"** to start **Lap Training** and enter the **Lap Time** of **Lap Training.**

LAP
TRAIN

- Press **"EL"** to activate the **NiteLite**.
- Press & hold **"↵ "** to turn **On / Off TZ Alarm.**
- Press **"STR"** to start lap training and enter **Lap Time.**
- Press **"MODE"** to advance to **Exercise File Mode.**

When the stopwatch is running, you can view the following information:

Lap Time

LAP-01
00:05:00
125
▼TZ

Total time

Time in TZ

- Press **" EL"** to activate the **NiteLite**.
- Press & hold **"☉"** to turn **On / Off TZ Alarm**.
- Press **"LAP"** to start a new Lap.
- Press **"NXT"** to enter next item.
- Press **"STOP"** to stop the **Stopwatch.**

Fluid Loss		
LM Time Above TZ		• Press **"** *EL***"** to activate the **NiteLite**.
LM Time Below TZ		• Press & hold **"**☉**"** to turn **On /Off TZ Alarm**.
AVG HR		• Press **"***LAP***"** to start a new Lap.
		• Press **"***NXT***"** to enter next item.
LM Max HR		• Press **"***STOP"*** to stop the **Stopwatch**
Calorie		

Note : "**LM**" represents information that can only be viewed in Long Menu. You can set **Long** or **Short Menu** in **HR Setup**. In **Long Menu**, you can see more information about your exercise event.

After pressing "LAP"

Starting a new Lap	
LAP-02 START	The screen will freeze for 2 seconds, then go back to the last screen.

When the stopwatch is stopped, you can view the following information:

Fitness Index	• Press **"***EL***"** to activate the **NiteLite** .
Total time	• Press & hold **"**☉**"** to turn **On / Off TZ Alarm.**
Time in TZ	• Press **"***STR***"** to start **Lap Training** and enter **Lap Time.**
Fluid Loss	• Press **"***NXT***"** to enter next item.
LM Time Above TZ	• Press **"***EXIT***"** to advance to **Store Data.**

LM Time Below TZ	
AVG HR	
LM Max HR	• Press **"***EL***"** to activate the **NiteLite**
	• Press & hold **"**☉**"** to turn **On / Off TZ Alarm.**
Calorie	• Press **"***STR***"** to start **Lap Training** and enter **Lap Time.**
Time & AVG HR of Lap-50	• Press **"***NXT***"** to enter next item.
......	• Press **"***EXIT***"** to advance to **Store Data.**
Time & AVG HR of Lap-1 LAP-01 00:07:00 130 TZ	

Note 1 : For more Information about **Fitness Index**, please refer to the **Fitness Index** in **Free Training**.

Note 2 : You can view the time and average HR of all the laps.

Note 3 : " **LM** " represents information that can only be viewed in Long Menu. You can set **Long** or **Short Menu** in **HR Setup**. In **Long Menu**, you can see more information about your exercise event.

Store Data

> • Press " *EL*" to activate the **NiteLite**.
>
> • Press "↵" to store data and exit to **Lap Training Mode.**
>
> • Press "***EXIT*** " if you do not wish to store data and exit to **Lap Training Mode.**

```
FILE
NIL
```

● Press **"EL"** to activate the **NiteLite.**

● Press **"MODE"** to advance to **Set Mode**.

Note: Hydra - Alert™ HRM has just one exercise file, so it can only save **Free Training** information **or Lap Training** information.

2.9.1 File Mode (for free training)

Press **"↵ "** to view the recorded Exercise Information.

```
FILE
FREE
```

● Press **" EL"** to activate the **NiteLite.**
● Press **"↵"** to view recorded information.
● Press **"MODE"** to advance to **Set Mode.**
● Press & hold **" CL"** to reset the file and return to **Exercise File Mode.**

Recorded Exercise Information

File

```
FILE
07-23'08
5:14 PM
```

● Press **" EL"** to activate the **NiteLite.**

● Press **"NXT "** to scroll to the recorded exercise information.

● Press **"EXIT"** to return to **File Mode for free training**.

Total Time

```
TOTAL
00:45:26
```

Time in TZ

```
IN TZ
00:20:08
```

Fluid Loss

```
FL-ml
68 0
```

```
FL-ml
0.95 %
```

LM Time Above TZ

```
> TZ
00:16:12
```

LM Time Below TZ

```
< TZ
00:09:06
```

AVG HR

```
AVG HR
12 8
```

● Press **" EL"** to activate the **NiteLite**

● Press **"NXT "** to scroll to the recorded exercise information.

● Press **"EXIT"** to return to **File Mode for free training**

LM Max HR	
MAX HR 165 ♥	• Press **"** *EL***"** to activate the **NiteLite.** • Press **"***NXT* **"** to scroll to the recorded exercise information. • Press **"***EXIT***"** to return to **File Mode for free training.**
Calorie	
CAL 380	
Fitness Index	
FI 80	

Note : "**LM** "represents information that can only be viewed in Long Menu. You can set **Long** or **Short Menu** in **HR Setup**. In **Long Menu**, you can see more information about your exercise event.

2.9.2 File Mode (for Lap training)

Press **"↵ "** to view the recorded Exercise Information

FILE LAP ↵	• Press **"***EL***"** to activate the **NiteLite.** • Press **"↵ "** to view recorded Exercise Information • Press **"***MODE***"** to advance to **Set Mode.** • Press & hold **"***CL***"** to reset the file and return to **Exercise File Mode**

Recorded Exercise Information

File	
Total time	
Time in TZ	
Fluid Loss	
LM **Time Above TZ**	
LM **Time Below TZ**	
AVG HR	• Press **"** *EL***"** to activate the **NiteLite.**
LM **Max HR**	• Press **"***NXT* **"**to scroll to the recorded exercise information.
Calorie	• Press **"***EXIT***"** to return to **File Mode for lap training.**
Fitness Index	
Time & AVG HR of Lap-50	
......	
Time & AVG HR of Lap-1	
LAP-01 00:07:00 ♥ 130	

Note 1 : "**LM** "represents information that can only be viewed in Long Menu. You can set **Long** or **Short Menu** in **HR Setup**. In **Long Menu**, you can see more information about your exercise event.

Note 2: Under all Normal Modes, if there is no HR or button signal for 3 minutes, it will return to **Clock Mode.**

2.10 Set Mode

The **Set Mode** includes **Time Setup**, **Alarm Setup**, **Interval Timer Setup**, **HR Setup**, **MET Setup** and **SYNC Setup**.

In **Set Mode**, press " ↵ " to initiate **Time Setup.**

- Press **" EL"** to activate the **NiteLite**.
- Press **"↵"** to enter **Time Setup**.
- Press **"MODE"** to return to **Clock Mode.**

In each setup section, press **"↵"** to adjust settings.

Time Setup	
Alarm Setup	• Press **"EL"** to activate the **NiteLite.**
Interval Timer Setup	• Press **"↵ "** to start setting.
HR Setup	• Press **"NXT"** to toggle between setup sections.
MET Setup	• Press **"EXIT"** to return to **Set Mode**
SYNC setup	

2.10.1 Time Setup

Setting Items	Press "+ "/" - "	Press"NXT"	Press"EXIT"
12/24 Format	Set 12 /24 hour format	Advance to next setting item.	Return to **Time Setup.**
Hour	• Increase/Decrease the value • Press & hold to increase the speed at which the values adjust		
Minutes			
Year			
Month			
Date			

Note: In a 12-hour format, Time display without PM icon means AM.

Setting Items	Press "+ "/" - "	Press"NXT"	Press"EXIT"
SmartLite	Set the SmartLite to On / Off	Advance to next setting item.	Return to **Time Setup.**
SmartLite (From)	• Increase/Decrease the value • Press & hold to increase the speed at which the values adjust		
SmartLite (To)			

2.10.2 Alarm Setup

Setting Items	Press "+ "/" - "	Press"NXT"	Press"EXIT"
Hour	• Increase/Decrease the value • Press & hold to increase the speed at which the values adjust	Advance to next setting item.	Return to **Alarm Setup.**
Minutes			
Alarm ON/OFF	Set the Alarm to On / Off		

Note: You can also turn On / Off Daily Alarm swiftly by Press and Hold **"☉"** in **Clock Mode.**

2.10.3 Interval Timer Setup

Setting Items	Press "+ "/" - "	Press"NXT"	Press"EXIT"
Timer ON/OFF	Set Interval Timer to ON /OFF	Advance to next setting item.	Return to **Interval Timer Setup.**
Number of Timers			
Number of Cycles for Timer 1	• Increase/Decrease the value • Press & hold to increase the speed at which the values adjust		
Minutes for Timer1			
Seconds for Timer1			
Number of Cycles for Timer 2			
Minutes for Timer2			

Setting Items	Press "+ "/" - "	Press"NXT"	Press"EXIT"
Seconds for Timer2	• Increase/Decrease the value • Press & hold to increase the speed at which the values adjust	Advance to next setting item.	Return to **Interval Timer Setup.**
Number of Cycles for Timer 3			
Minutes for Timer3			
Seconds for Timer3			

Note: You can also turn On / Off Interval Timer Swiftly by Press & Hold **"☉"** in **Interval Timer Mode.**

Setting Items	Press "+ "/" - "	Press"NXT"	Press"EXIT"
Menu Short/ Long	Set **Short / Long Menu**		
Unit	Set Unit to **Metric** or **US**		
Weight	• Increase/Decrease the value • Press & hold to increase the speed at which the values adjust	Advance to next setting item.	Return to **HR Setup.**
Age			
Max HR			
Upper Limit for TZ zone			
Upper Limit for TZ zone			
In-Zone-Goal Count Down Timer			
TZ Alarm ON/OFF	Set **TZ Alarm** to **On / Off**		

Note: You can also turn On / Off TZ Alarm by Press & Hold **"☉"** in **Free Training** & **Lap Training Mode.**

2.10.5 MET Setup

Setting Items	Press "+ "/" - "	Press"NXT"	Press "EXIT"
Exercise Type	Select exercise type, **"MET"** or **"CALAB"**	Advance to next setting item.	Return to **MET Setup.**
Exercise Intensity	Select exercise intensity		
MET Parameter	• Increase/Decrease the value • Press & hold to increase the speed at which the values adjust		

Note: • If you choose a particular type of Exercise, press **"NXT"** to return to **MET Setup Mode** after setting the **Exercise Intensity**.
 • If you choose **"MET"** in Exercise Type, press **"NXT"** to go to **MET Parameter.**
 • If you choose **"CALIB"** in Exercise Type, press **"NXT"** to go to REST HR for **MET Calibration.**

Personal MET Calibration (Max MET (VO2 Max) Calibration)

Phrase 1: Rest HR

Rest HR	Press "+"/ "-"	Press "NXT"	Press"EXIT"
REST HR AUTO SET	Select "AUTO" or "MANU" to set the Rest HR	Advance to set the **Rest HR** by "MANU" or "AUTO."	Return to Exercise Type

"MANU"

REST HR	Press "+" /"-"	Press "NXT"	Press"EXIT"
REST HR 68 SET	• Increase/Decrease Rest HR • Press & hold to increase the speed at which the values adjust	Advance to Exercise HR	Return to Exercise Type

" AUTO "

REST 00:01:00 ♥ 68 SET	• Press **"STR"** to start the 1-minute countdown. Your average Rest HR will be displayed when the countdown is completed. • Press **" EXIT "** to return to Exercise Type.

Note: 1. It will enter Exercise HR automatically 2 seconds after the display of the average HR.
     2. If there is no heart rate signal during recording, it will display **"ERR"** and then return to Personal MET Calibration again.

Phrase 2: Exercise HR

| Exercise Distance	Press "+ "/" - "	Press"NXT"	Press"EXIT"
EXER DS T- KM 1.6 SET	Select 1.6 KM or 1 Mile	Advance to Stopwatch display	Return to **Exercise Type**
Start Exercise	Press "STR"	Press "EXIT "	
EXER 00:00:00 ♥ 68 SET	Start the stopwatch	Return to Exercise HR (Before the stopwatch starts).	
Stop Exercise	Press **"STOP"** to end the stopwatch and advance to **Calibrated MET.**		
Calibrated MET			
MET DO NE 12.5 SET	Your Calibrated **MET** value will be displayed on the screen and it will return to **MET Setup** after 2 seconds.		

Note: If there is no heart rate signal during recording, it will display **"ERR"** and then return to **Exercise HR** after 2 seconds.

2.10.6 SYNC Setup **(Refer to section 1.4 SYNC Setup)**

Replacing the Battery

Hydra-Alert ™ HRM uses a Lithium CR2032 battery.

When the watch displays "**LOW BATT**" (as in the figure below), the battery in your watch needs to be replaced. To maintain its water resistance, professional battery replacement service is advised. Improper battery replacement or service will void the warranty. In the case of self replacement, removal of the old battery should be documented in detail to ensure proper replacement of new battery, position of contacts, and O-ring line-up. To maintain the watch's water resistance, it is a good idea to smear a small drop of silicone lubricant spray on the O-ring.

LOW
B AT T
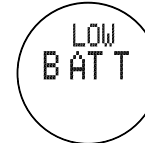
Note: After the first low battery warning comes on for 15 minutes, the **EL, Heart Rate, Humidity & Temperature** features will be turned off to conserve the battery power.

3

Technical Reference

Determining Your Target Zone

What is Target Zone Heart Rate Training? To benefit the most from your workout, you should become familiar with your heart rate training zone. By exercising within the correct heart rate range, you will achieve your fitness goals and strengthen your cardiovascular system in less time. Here is basically how it works.

Scientific research has shown that effective conditioning requires that you maintain your heart rate at the proper level for at least 20 minutes per workout (or per day). Exercising above you heart rate training zone can be counter-effective. For most people, as your heart rate exceeds 85% of your maximum Heart Rate, which is the upper limit, your body begins to become anaerobic and produces acids. At this stage, your body begins to burn muscle instead of fat. When you have reached the lower limit of you Target Zone Heart Rate Training, effective conditioning can be achieved. A heart monitor will tune you in to your body's internal activity level and helps prevent injury.

The **Hydra-Alert™ HRM** automatically sets the correct Heart Rate Target Limits by using the American Heart Association standard range of 65% to 85% of the calculated maximum Heart Rate based on your age. The maximum HR is calculated based on the equation, max HR = [207 – (Age x 0.7)].

There are various formulas for calculating Heart Rate Target Zones. In most cases, the formulas provide a range that is the same as or very close to the auto-setting of the **Hydra-Alert™ HRM**. If you prefer to fine-tune or program your own limits, this can also be done in the HR Setting Mode. The internal automatic TZ calculation is based on the following example:

TARGET ZONE CALCULATION FORMULA

207 - Your age x 0.7 = max HR
For a 30 year old person, your
calculations would be as follows:
207 - 30 x 0.7 = 186 Maximum Heart Rate
65% of this number = 121
85% of this number = 158

The calculated exercise range for a 30-year-old would be a low of 121 beats per minute and a high of 158 beats per minute. You should never exercise near your maximum heart rate (max HR) for any period of time.

Basic Fitness Target Zone & Tips

Depending on your specific goals, individual fitness level or just on how energetic you feel, you may want to modify your heart rate range from one day to the next based on the following chart:
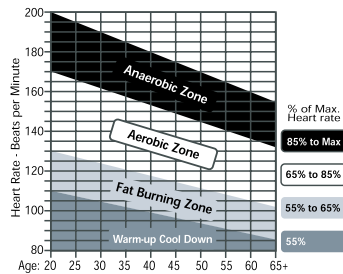
Stretching

Stretch at the beginning and end of every workout. Stretching before your workout increases flexibility and helps prevent muscle strain or injury. Stretching after your workout loosens tight muscles and helps prevent soreness.
• Stretch before warm up and after cool down.
• Stretch slowly and gently. Never bounce or stretch to a point of pain.
• Hold each stretch for 30-60 seconds and exhale as you extend into stretches.

Warm Up & Cool Down: 55% or Less of Max. HR

Begin and end every workout with a slow and gradual warm up and cool down, respectively, Smoothly easing into and out of strenuous activity helps your body prepare your metabolism and blood flow to efficiently break down fat and change from one intensity level to another. Going into your Heart Rate Target Zone too quickly can cause your heart rate to increase too rapidly. Rapid increase of the heart rate could compromise consistent energy levels during a workout.
• Slowly bring your heart rate to a level just below the lower limit of your Heart Rate Target Zone.
• Maintain your heart rate at this level for 5 to 10 minutes.

The Fat Burning Zone: 55%-65% of Max.HR

The Fat Burning Zone is recommended for those who are not in adequate physical shape. This is the ideal zone for those who are beginning to exercise regularly, would like to loose weight, and are at high risk for heart problems. It is intended for low intensity and/or long duration exercise. Exercising at a lower intensity allows for a longer, continuous exercising period. For weight loss and new exercise programs, longer, continuous, low intensity workouts are safer and more beneficial. Slow and steady wins the race!
• Duration: Build up gradually to 30 to 60 minutes per workout.
• Frequency: Workout 3 or 4 times per week.

The Aerobic Zone: 65%-85% of Max. HR

The Aerobic Zone is recommended for those in good physical condition who have been exercising on a consistent basis for an extended period of time. Exercising at this range helps improve your fitness level and prevent injury

from excessive training.
• Duration: 20 to 30 minutes per workout.
• Frequency: At least 3 or 4 times per week.

The Anaerobic Zone: 85% to Max HR

The Anaerobic Zone is ONLY recommended for to professional athletes or those in exception physical condition. This zone can also be used for interval training (high intensity for short durations) to help enhance overall strength and endurance.

Monitor your Progress

Heart rate fluctuations during physical activity can be tracked and documented to determine overall health and fitness progress. As the cardiovascular system becomes stronger, the resting heart rate will decrease. It will require more intensive physical activity to reach the target zone and less time for the heart rate to recover.

Higher than usual resting heart rate and slower than usual heart rate recovery could be an indication of strain of the heart from strenuous exercise or dehydration. Resting for a day, lower intensity exercising, and replenishing the body with fluids are advised. If your heart rate activity does not return to normal, please consult a doctor.

3.2 Getting to Know Heat Index

The Heat Index combines the effects of heat and humidity. When heat and humidity combine to reduce the amount of evaporation of sweat from the body, outdoor exercise becomes dangerous even for those in good physical condition. Key rules for coping with heat are to drink plenty of water to avoid dehydration, slow down, and cool off when feeling fatigued, headache, a high pulse rate or shallow breathing. Overheating can cause serious, even life-threatening conditions such as heat stroke. The **Apparent Temperature**, which combines the temperature and relative humidity, is a guide to the danger. Below is the **Heat Stress Index** based on the **Apparent Temperature.**

Category	Apparent Temperature	Dangers
Care	80-89°F	Exercise more fatiguing than usual
Ultra Care	90-104°F	Heat cramps, exhaustion possible
Danger	105-130°F	Heat exhaustion likely
Ultra Danger	Greater than 130°F	Heat sroke imminent

Effects of Heat Illnesses

Heat Cramps:
Exercising in hot weather can lead to muscle cramps, especially in the legs, because of brief imbalances in body salts. Cramps become less frequent as a person becomes used to the heat. As with heat cramps, the cure is to take it easy.

Heat Syncope or Fainting:
Anyone not used to exercising in the heat can experience a quick drop in blood pressure that can lead to fainting.

Heat Exhaustion:
The loss of fluid and salt through perspiration and improper replacement of them can lead to dizziness and weakness. Body temperature might rise, but not above 102 degrees. In some cases, victims especially the elderly should be hospitalized. Heat exhaustion is more likely to occur after continuous exposure to excessive heat waves. The best prevention from heat exhaustion is to drink plenty of water and minimize physical activity in the heat. Salt tablets should not be taken without consulting a physician.

Heatstroke:
In some cases, extreme heat can upset the body's thermostat causing body temperature to rise to 105 degrees or higher. Heat stroke symptoms include lethargy, confusion, and unconsciousness. Suspicion of heatstroke also requires immediate medical attention since heatstroke can result in death.

The importance of the **Heat Index** is to show how hot a particular combination of heat and humidity feels. The Heat Index in the **Hydra-Alert ™** is a report of the latest weather conditions based on the current temperature and the relative humidity. Please refer to the following Heat Index Chart to learn about the **Apparent Temperature** and to minimize the possibility of getting heat stroke.

How Temperature and Humidity Combine to Make If Feel Hotter
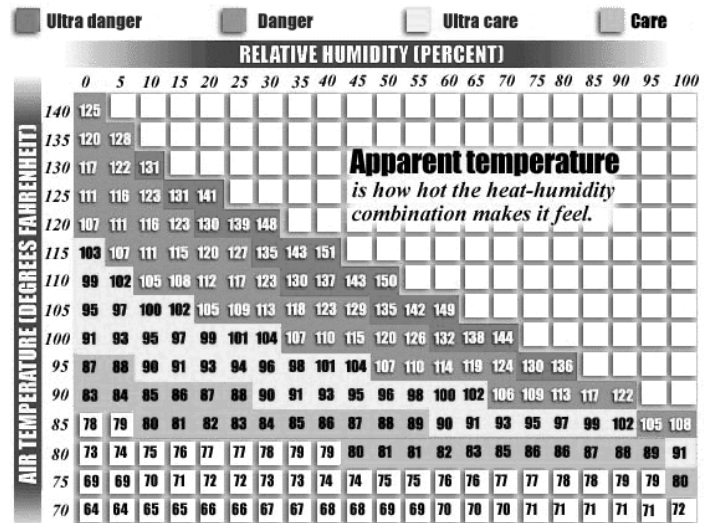
3.3 Determining Your MET Parameter

If a specific activity is not available in your watch, choose a similar exercise type and use the corresponding parameter from the table below to set your watch (Please refer to page 28 to set the MET Parameter).

Exercise	Intensity Level		
	Light	Medium	High
AEROBICS	6	7,8	9
BASKERBALL	7	8,9	10-12
BOWLING	2	3	4
CYCLING	3 - 5	6 - 8	9,10
DANCING	3	4 - 6	7,8
FOOTBALL	6,7	8	9,10
GOLF	4,5	6	7
HIKING	3 - 5	5 - 8	9-11
JUMPING ROPE	8	9,10	11,12
JOGGING	8	10	1 2
RUNNING	8 - 10	11 - 15	16,17
SKATNG(ice/inline)	5	6,7	8,9
SKIING	6,7	8 - 10	11,12
SKIING(CrossCountry)	5	6,7	8
SWIMMING	4	5 - 7	8-10
STAIRS	4	5,6	7,8
TENNIS	4,5	6,7	8,9
VOLLEYBALL	3	4,5	6
WALKING	3	4 - 6	7

Body Fluid Check™ Monitoring Guidelines and Tips

The ACUMEN **Hydra-Alert**™ provides an indication of the level of dehydration. The purpose of the dehydration reading is to remind individuals to replenish the body with fluids during exercise.

It takes the human body 12 to 24 hours to replace fluids from heat and exercise. To prevent the harmful effect of excessive dehydration it is necessary to drink before you become thirsty.

The thirst mechanism is not precise in humans. An individual can lose fluids equaling up to 3% of their body weight before a person feels that they need to quench their thirst.

Strength and endurance are reduced by 10-15% after just a 2% loss of body weight, through dehydration.

Most people need more than eight glasses (8 ounces) of water per day. Water intake each day needs to be half your body weight in ounces. Do not drink more than 32 ounces at any one time. Water intake should be divided throughout the entire day.

If the exercise period is under 60 to 90 minutes, water intake is always appropriate. If the exercise period is more than 60 to 90 minutes, a sports drink offers an energy advantage that can enhance stamina and endurance.

Cardiac drift occurs because dehydration causes a drop in blood volume causing less blood to be pumped with each heartbeat. The heart rate increases 7 beats per minute for each 1% loss in body weight due to dehydration.

The keys to Proper Hydration:
   Drink on schedule, rather than relying on thirst
   Drink during training as well as competition
   Drink cold water to increase gastric emptying

The American College of Sports Medicine on Exercise and Fluid Replacement (ACSM, 1996) states that adequate fluid replacement helps maintain hydration and, therefore promotes the health, safety, and optimal physical performance of individuals participating in regular physical activity.

3.5 Specifications

• **Shock Resistant**

   Standard shock resistance.

• **Water Resistant**

   98 feet (or 30 meters). Not intended for diving.

• **Operating Temperature**

   32 °F to 122 °F (0 °C to 50 °C)

• **Heart Rate Range**

   20~240 BPM

• **Heart Rate Transmitter/Receiver Distance**

   0~34 inches

• **Battery Type**

   Heart Rate Transmitter: Lithium CR2032   Watch: Lithium CR2032

3.6 Technical Display Guide

Display Items	Default Setting	Range
Time	12:00:00 AM	12/24 hr. Clock
Time Alarm	off,12:00 AM	ON/OFF

Display Items	Default Setting	Range
Date	01/01/2000	To 12/31/2099
Stopwatch	00:00:00	24:00:00
Age	30	7~99
Unit	Metric	Metric / US
Weight(KG/Lbs)	75.0 KG/150 Lbs	30 ~ 250 KG / 50~ 500 Lbs
In-Zone-Goal Count Down Timer	OFF	OFF, 5~60 minutes
Heart Rate Display		20~240 bpm
Upper Target Zone Limit	162 BPM	OFF, 20~240 bpm
Lower Target Zone Limit	124 BPM	OFF, 20~240 bpm
TZ Alarm	OFF	ON/OFF
MET Parameter	5	2-20
Exercise Type	Aerobics	19 Exercise Types
Calorie Display	0	0~9999 Kcal (roll over at 10,000)
SmartLite	OFF	ON/OFF
Humidity		1-99%
Temperature		14 ~ 140 °F / -10 ~ 60°C
Fluid Loss		0~999.9 Ounce/0~99.99% or 0~99999 ml/0~99.99%
Heat Index		64-151

4

4.1 General Precautions

- Do not operate buttons under water

  Although your monitor is water resistant, be sure that you do not operate the buttons under water as pressure can cause them to leak.

- Dry off watch after use

  Moisture can affect the Temperature and Heat Index reading. Please dry off your watch after use.

- Dry off transmitter after use

  The transmitter will automatically shut itself off once you have removed it from your chest. However, it is important to thoroughly dry it off after every use since moisture on the conductive fabric can cause it to remain on longer.

- Global Reset

  If your monitor should ever get stuck or act erratically due to dropping it, static shock or some other unforeseen reason, the Global Reset feature will allow you to reset the unit and return all settings back to their internal defaults. To perform this function, **Press and Hold** all four buttons together for 3 seconds under any mode (display all LCD). The unit will automatically reset and return to initial setting mode.

  Caution: Global Reset will RESET ALL FUNCTIONS BACK TO ORIGINAL FACTORY SETTINGS including your Personal Settings.

- **Battery Replacement**

  The **Hydra-Alert**™ **HRM** uses a Lithium CR2032 battery.
  To maintain the watch's water resistance, professional battery replacement service is advised. Improper battery replacement or service will void the warranty. In the case of self replacement, removal of the old battery should be documented in detail to ensure proper replacement of the new battery, position of contacts, and O-ring line-up. It is a good idea to smear a small drop of silicone lubricant spray on the O-ring.

4.2 Warranty

This product is warranted by **Acumen Inc.** for one year from the date of purchase (with the exception of batteries and elastic chest strap) against defects in workmanship and material. During this one-year period, these defects will be repaired or the product will be replaced by **Acumen Inc.** at its sole discretion without charge. This warranty covers normal consumer usage and does not cover damage which occurs in shipment or failure which results from accident, misuse, abuse, tampering, alteration or disassembling of the product or improper maintenance. This warranty is effective only if the product is purchased and operated in the USA and does not extend to any units which have been used

in violation of written instructions furnished by Acumen Inc. or to units which have been altered or modified without authorization of Acumen Inc., or to damage to products or parts thereof which have had the serial number removed, altered, defected or rendered illegible. The product must be returned to an authorized dealer for service if purchased outside of the USA.

Note: Please return the product to local authorized dealer for service if purchased outside of the USA.

4.3 Service & Repair

Do not attempt to repair your product. Should the product malfunction, please visit our website at www.acumeninc.com for Consumer Customer Service. If the problem cannot be resolved, return the product to the factory for repair. Under no circumstances should you attempt to open the housing and repair the product. Should you do this, your warranty will be voided.

In USA, securely package and return the product pre-paid to:

> **Acumen Inc.,**
> **101 A Executive Dr., Suite 100,**
> **Sterling, VA 20166**
> **USA.**

To Return for Service
a. First visit our website at **www.acumeninc.com/returnauthorization.asp** to obtain a Return Authorization Number.
b. Enclose your name, address and phone number.
c. Enclose the date of purchase (or receipt as a gift).
d. An description of the malfunction or reason to return.
e. Seven dollars and fifty cents ($7.50) Check or Money Order payable to Acumen Inc. for return postage and handling.
f. To insure prompt "In warranty" service, be sure to include proof of date of purchase.

We recommend you take the necessary precaution of insuring the parcel.

Outside USA, you should contact the local dealer or Acumen distributor in your country for customer service.

Acumen Europe BV
E-Mail:acumen@Acumeninc.com
Website: www.acumeninc.com